

### **REMARKS/ARGUMENTS**

Reconsideration of this application is requested. Claims 11-13 will be pending in the application subsequent to entry of this Amendment.

#### **Discussion of Claim Amendments**

The claims have been amended in order to more particularly point out and distinctly claim that which applicants regard as their invention and to generally follow the suggestions made in items (1) and (6) on pages 8-9 of the Official Action under the heading "Allowable Subject Matter". Applicants have certain reservations as to certain aspects of the suggested claims and these are highlighted and discussed in the remarks that follow. Basis for the new claims presented above will be apparent from the content of the claims as previously examined.

#### **Information Disclosure Statement**

On page 2 the Official Action indicates that the Information Disclosure Statement filed on October 12, 2004 lacks a statement as specified under 37 CFR §1.97(e). The IDS in question was submitted shortly after the mailing date of the Official Action of October 4, 2004 which was not a final rejection. Included with the Information Disclosure Statement was a payment of \$180 (a copy of our canceled check is attached as proof of payment) and thus qualifies for consideration under 37 CFR §1.97(c)(2). In short, the IDS should have been considered.

Submitted with this response is a further Information Disclosure Statement repeating the October 12, 2004 submission. As applicants have already paid the relevant fee for consideration (but none received) an additional fee should not be required. In any event, if the Office so requires any fees to assure full and complete consideration of this IDS may be charged to our deposit account as stated in the IDS itself.

#### **Response to Claim Clarity Rejection**

In the claim clarity rejection under 35 USC 112, second paragraph, the Examiner's interpretation of previous claim 4 is of course correct and the density should have read 945 to 960 kg/m<sup>3</sup>. This change will become academic however in view of the above amendments to the claims along the lines of the Examiner's suggestion. The same error is present in claims 8, 9 and 10, all now deleted.

Response to Prior Art-Based Rejections

The balance of the Official Action includes rejections based upon alleged anticipation and obviousness. However, applicants have taken the examiner's suggestions as to allowable subject matter on board and have prepared new claims 11-13 with them in mind.

The Examiner reiterates objections based on the Nowlin prior art (US 5,539,076) and applies a new document, Harlin (US 5,494,965), which was disclosed in the first Information Disclosure Statement on this case. The objections based on Nowlin are the same as those previously presented as the Examiner has rejected previous arguments regarding the novelty and inventiveness of the claims in the light of Nowlin.

In the spirit of moving the application forward, applicants are willing to accept the majority of the examiner's suggestions in the two proposed claims. The proposed ESCR, tensile modulus, Mn, comonomer content, MWD, container size and even overall lower molecular weight Mw ranges are all acceptable ranges. The restriction of the density to greater than 960 kg/m<sup>3</sup>, the overall Mw range and the restriction of the MFR<sub>21</sub> to 2 to 3.3 is not acceptable though. A claim set amended in this fashion is part of this Amendment.

As will be apparent from these new claims, applicants will accept all the limitations proposed other than the restriction to the density, overall Mw and the MFR<sub>21</sub> and propose instead that these are limited to 940-960 kg/m<sup>3</sup>, 200,000 to 450,000 and 3 to 8 g/10 min, respectively. In new claim 12 further limits of 940-960 kg/m<sup>3</sup> and 250,000 to 350,000 are proposed.

Applicants will now relate the two citations to the new claims presented above.

Applicants stress at first instance that Nowlin covers a massive variety of different polymer species with no teaching towards the materials applicants are claiming. Thus, it must firstly be noted that the Nowlin prior art considers the possibility of making low density, medium density and high density materials (see the bottom of column 2). It also considers blends of homopolymers, blends of copolymers and admixtures thereof. To make a material having any chance of falling within the scope of claim 11, i.e. to select the necessary high density ethylene homopolymer/copolymer mixture, requires the selection of one option from nine different options.

Nowlin considers the use of the materials he teaches in injection moulding and in film formation as well as in the formation of blow moulded containers. As applicants' claims are

limited to blow moulded articles only, to manufacture a blow moulded article of a high density ethylene homopolymer/copolymer blend requires the selection of one option in 27 (assuming all options are equal, of course).

Claim 11 requires that the container formed is 8L or more (*see* original claim 6). Nowlin covers this possibility as it mentions fuel tanks and drums but he also mentions bottles. Most bottles are not 8L in size. A still yet further selection has to be made to prepare only 8L bottles.

It is conceded that the higher density materials would overlap in density with the density range in new claim 11. Also, the molecular weight distribution range disclosed by Nowlin would cover the preferred range in proposed claim 11. The examples give some values for Mw and Mn but these are of course not for polymers falling within the scope of the invention. It is therefore difficult to draw conclusions from these figures although the Mw and Mn values do overlap with applicants' values.

Regarding the MFR<sub>21</sub>, the preferred range for this parameter proposed in column 9 is in connection with films not blow moulded containers. Moreover, the disclosure is in connection with a blend of two copolymers. Nowhere is the range 3 to 8 g/10 min taught in connection with blow moulded articles.

Nowlin is completely silent with regard to the preferred comonomer range in claim 11. In column 4, the range given for comonomer content is 0.1 to 25 wt% there is thus absolutely no teaching to manufacture polymers having 1 to 2 wt% of comonomer.

Claim 11 recites an ESCR value of at least 500h. Nowlin is generally silent on this range but does quote an ESCR value in example E. The ESCR value reported in example E of 128 hours is very much less than the 500 hour value applicants now claim. Both tests are based on the ASTM D 1693 condition (page 6, line 8 of applicants' text) although it is uncertain that Nowlin has used condition B. Applicants submit that their ESCR is simply much better than that shown by Nowlin.

Nowlin says absolutely nothing about tensile modulus. Applicants emphasize the ESCR parameter as being the most important. The application as filed did stress that the invention related to the formation of blow moulded articles with high ESCR and the application exemplifies and now claims materials having very high ESCR's. There is no teaching in Nowlin that such higher ESCR's could be achieved using the polymers of the invention. Nowlin is

primarily concerned with the formation of films where ESCR is irrelevant. The one ESCR value quoted by Nowlin is many times lower than the values presented in the application and claim 11. Claim 11 is thus patentable over Nowlin.

Considering next Harlin, applicants are uncertain where the Examiner finds the disclosure of the ethylene homopolymer copolymer blend. The Examiner has not raised the argument that the unimodal component can form the LMW component so presumably he considers the bimodal component of Harlin to disclose the blend. He seems to rely on claim 14 to argue that a blend is disclosed but claim 14 makes no sense as a polymer cannot be "ethylene". Even if it did mean polyethylene this does not specify a homopolymer or copolymer.

Harlin's Examples are free of comonomer so there is no teaching of a blend there either. As an initial point of distinction, Harlin provides no disclosure of the blend of claim 11. While it is true that Harlin discloses the possibility of making both homopolymers and copolymers but he does not mention mixtures thereof.

It must also be noted that Harlin mentions polymers other than polyethylenes and blow moulding is one of various options for the polymers it describes. Film and pipe are also disclosed. Also, the density range for the bimodal polymer in Harlin is 915 to 960 (column 4, line 46). Harlin also covers therefore much lower densities than those now claimed.

The ranges of the various parameters given in column 4, line 57 do encompass the ranges in proposed claim 11 here although of course they are very much broader, especially the MFR<sub>21</sub> range, than those in claim 11. The claims under consideration now cover a tiny area which, taking each of the large number of options in Harlin into account, is arguably generically covered but it is not explicitly taught. Why would the skilled man manufacture a composition having the specific properties now claimed given the Harlin disclosure? While he could manufacture such a composition, there is no particular motivation to do so and hence no reason to find that the ESCR properties of such a composition are especially high.

Harlin is completely silent with regard to ESCR, tensile modulus, and comonomer content. The Examiner argues that the ESCR at least is "inherent" but that is to forget that the specific composition applicants are now claiming is the one with the high ESCR. Harlin covers a multitude of different polymers but it is only those applicants are claiming which have been shown to possess the high ESCR properties. The most preferred materials in Harlin are those of

its examples and the compositions disclosed therein bear no resemblance to the process and materials applicants are claiming.

The Examiner also argues it would be obvious to optimize the comonomer content. Why however would one wish to optimize it to the range applicants claim? The reason to do so is to improve ESCR, but Harlin does not seek polymers with high ESCR so there is no motivation to optimize this parameter in Harlin. In fact, comonomer content seems irrelevant to Harlin as he does not use comonomers in his examples

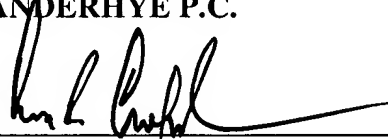
The applicants' position is therefore than Harlin does not motivate the skilled man to manufacture polymers as claimed in the current claim set as the problem of improving ESCR is not one which Harlin identifies. As the polymers applicants claim are optimized for ESCR, no-one reading Harlin would optimize in the fashion required to obtain the claimed materials as there is no reason to do so. Harlin wants polymers formed without gels - a different objective.

Reconsideration of this application and allowance are solicited. Should the examiner require further information, please contact the undersigned.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

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